

2/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70
 CIRC ACCESSION NO--AP0134942
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF RR PRIME1 C SUB6 H
 SUB3, NHCH SUB2 CH(OH)R PRIME2 WITH NASCN IN AQ. CUSO SUB4 GAVE
 (4,NCSC)R, R PRIME1 C SUB6 H SUB2 NHCH SUB2 CH(OH)R PRIME2 (I) (R, R
 PRIME1, AND R PRIME2 GIVEN): H, H, H; H, H, ME; 2,ME, H,H; 3,ME, H,H;
 2,OME, H,H; 2,CL, H, H; AND 2,CL, 5,CL, H. SIMILARLY, BETA
 PHENOXYETHYLAMINO ANALOGS OF I WERE PREPD. CONDENSATION OF 4,NCSC SUB6
 H SUB4 NH SUB2 WITH PROPYLENE OXIDE OR EPICHLOROHYDRIN GAVE, RESP., I (R
 EQUALS R PRIME1 EQUALS H, R PRIME2 EQUALS ME) OR I (R EQUALS R PRIME1
 EQUALS H, R PRIME2 EQUALS CH SUB2 CL). THE OPENING OF THE OXIDE RINGS
 PROCEEDED AS EXPECTED. FACILITY: INST. KHIM. RAST. VESHCH.,
 TASHKENT, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THIOCYANATION OF N,BETA, HYDROXYALKYLALKYLAMINES AND THEIR
DERIVATIVES -U-
AUTHOR-(02)-AMBARTSUMOVA, R.F., TULYAGANOV, S.R.
COUNTRY OF INFO--USSR A
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1045-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CONDENSATION REACTION, EPICHLOROHYDRIN, ORGANIC OXIDE,
PROPYLENE, THIOL, CYANATE, AMIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1268 STEP NO--UR/0366/70/006/005/1045/1049
CIRC ACCESSION NO--AP0134942
UNCLASSIFIED

2/2 014
CIRC ACCESSION NO--AN0125504

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS OF TODAY, THE TOTAL NUMBER OF SCIENTIFIC INSTITUTIONS IN GEORGIA HAS REACHED 194. 136 OF THIS TOTAL ARE RESEARCH INSTITUTIONS, INCLUDING 39 INSTITUTES OF THE ACADEMY OF SCIENCES. IN ADDITION TO THE ACADEMY, RESEARCH IS CONDUCTED IN 18 INSTITUTIONS OF HIGHER LEARNING OF THE REPUBLIC AND INDUSTRIAL INSTITUTES. THE VICE PRESIDENT OF THE GEORGIAN ACADEMY OF SCIENCES IS R. R. DVALI. THE YOUNGEST RESEARCH INSTITUTE IN GEORGIA IS THE INSTITUTE OF CONTROL SYSTEMS HEADED BY A. I. ELIANSHVILI.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--THE GLORIOUS PATH OF GEORGIAN SCIENCE -U-
AUTHOR--AMBAROVA, T.
COUNTRY OF INFO--USSR A
SOURCE--ZARYA VOSTAKA, JULY 19, 1970, P 2, CULS 1-8
DATE PUBLISHED--29JUL70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--GEOGRAPHIC LOCATION, SCIENTIFIC INSTITUTE, HIGHER EDUCATION
INSTITUTE R AND D, AUTOMATIC CONTROL RESEARCH FACILITY, AUTOMATIC
CONTROL PERSONNEL, MANAGEMENT PERSONNEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1911 STEP NO--UR/9029/70/000/000/0002/0002
CIRC ACCESSION NO--AN0125504
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123467

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF ELECTRICAL STIMULATION OF THE ANTERIOR LOBE OF THE CEREBELLAR CORTEX ON NEURONAL ACTIVITY OF DIFFERENT PARTS OF FASTIGIAL NUCLEI WAS STUDIED IN SLIGHTLY ANESTHESIZED (NEMBUTAL) CATS. THE INHIBITORY INFLUENCE OF THE CEREBELLAR CORTEX (80.6 PERCENT OF THE RESPONDING NEURONS) WAS DISPLAYED IN A COMPLETE BLOCKADE OR SLOWING DOWN OF THE FREQUENCIES OF SPIKE ACTIVITY FOLLOWED A LONG AFTER DISCHARGE AND REBOUND EFFECT. THE FACILITATING INFLUENCE OF THE CEREBELLAR CORTEX (14.5 PERCENT) OF NEURONS WAS CHARACTERIZED BY AN INCREASE IN THE FREQUENCIES OF SPIKE ACTIVITY. RECIPROCAL INFLUENCES ON DIFFERENT SUBCORTICAL NEURONS AND BLOCKADE OF THE INHIBITORY INTERACTION BETWEEN NEIGHBOURING CELLS OF THE NUCLEUS WERE DISCOVERED. THE EFFICIENCY OF THE CORTICAL STIMULATION DEPENDED ON THE LOCATION OF THE ELECTRODE. ZONES OF MAXIMAL DENSITY OF PROJECTIONS TO EACH NUCLEAR NEURON COULD BE DISCOVERED IN THE CEREBELLAR CORTEX. FACILITY: THE L. A. ORBELI INSTITUTE OF PHYSIOLOGY. FACILITY: ACADEMY OF SCIENCES, ARMENIAN SSR, YEREVAN.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE INFLUENCE OF THE VERMAL ZONE OF CEREBELLUM ANTERIOR LOBE ON THE
BACKGROUND ACTIVITY OF THE FASTIGIAL NEURONS -U-
AUTHOR-(02)-AMATUNI, A.S., OGANESYAN, E.A.

COUNTRY OF INFO--USSR

SOURCE--NEYROFIZIOLOGIYA, 1970, VOL 2, NR 3, PP 260-268

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREBELLUM, CAT, NEURON, ELECTRICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1979/1624

STEP NO--UR/0660/70/002/001/0260/0268

CIRC ACCESSION NO--AP0123467

UNCLASSIFIED

USSR

UDC 536.4.088

AMATUNI, A. N., MALYUTINA, T. I., TSORIN, V. G., SHEVCHENKO, YE. B.

"Increasing the Accuracy of Determination of the Coefficients of Linear Thermal Expansion is a Way of Improving the Quality of Mechanisms and Instruments"

Moscow, Izmeritel'naya Tekhnika, No. 7, 1971, pp 40-41

Abstract: Note is taken of the necessity for increasing the precision of measurement of coefficients of linear thermal expansion for design calculations of thermal deformations in machine-tool and instrument production. There is shown the degree of accuracy to which the coefficient of linear thermal expansion of various materials must be known in order to provide for a high degree of reliability of installations working under variable conditions. Note is taken of the fact that dilatometers used for this purpose, either domestically produced or those imported extensively from abroad, do not provide a sufficiently high degree of measurement precision. In addition, the dilatometers being produced by Soviet industry are not of the type required in many instances. Recommendations are made that dilatometers of the appropriate types be produced, and that the ones presently being produced and imported should be subjected to more rigorous testing. Standardized test methods for various dilatometers should be developed. 1 bibliographic entry.

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USSR

UDC: 538.4

AMASOVICH, Yu. I.

"On Calculating a Flat Jet Type Radioactive Ionizer"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collected Scientific Works. Kiev Institute of Civil Aviation Engineers), 1971, vyp. 7, pp 42-46 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B63)

Translation: The problem of blowing a space charge out from a flat radioactive ionizer made in the form of two parallel metal plates with a radioactive layer applied to one of them is considered on the basis of the electrohydrodynamic boundary layer equation. It is assumed that the thickness of the layer in which ionization takes place is negligibly small. The solution, which is found by the method of moments, can be used to evaluate the characteristics of charge distribution in a radioactive ionizer. Author's abstract.

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USSR

UDC: 536.2:536.63

PELETSKIY, V. E., CHERNOMORSKOY, V. Ya., SOVITSKIY, Ye. M., TYBKINA, E. A.,
AMASOVICH, Ye. S., ALEKHA, Ye. P., ZAYCHENKO, V. M., PETUKHOV, V. A.,
Institute of High Temperatures of the Academy of Sciences of the USSR,
Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences of
the USSR

"Some Physical Properties of a New Alloy in the Nickel-Rhenium-Molybdenum
System"

Moscow, *Teplofizika Vysokikh Temperatur*, Vol 11, No 2, Mar/Apr 73, pp
435-436

Abstract: The authors study the heat conduction, coefficient of thermal expansion and resistivity of an alloy in the nickel-rhenium-molybdenum system containing 10 wt.% Re and 15 wt.% Mo. Curves are given showing the temperature dependence of the measured parameters between 100 and 1000°K. The results indicate structural transformation of the alloy in the solid state. Analysis points to the possibility of formation of the so-called K-state observed in the region of solid solutions of the nickel-chromium system with more than 16% chromium. However, a final explanation of the observed anomalies will require further research.

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USSR

UDC 547.279

TKALENKO, V. G., AMARSKAYA, A. P., KOLODYAZHNYI, Yu. V., SADEKOV, I. D.,
MINKIN, V. I., and OSIPOV, O. A., Rostov-on-the-Don State University

"Synthesis and Physical Chemical Properties of Aromatic and Heterocyclic
Derivatives of Tellurium. V. Investigation of the Complex Formation of
 TeCl_4 With Schiff's Bases"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1943-1947

Abstract: Novel complex compounds of TeCl_4 with benzalanilines and β -hydroxynaphthalanilines have been synthesized. On the basis of IR spectroscopic study of these complexes the conclusion was reached as to the localization of the coordination bond in azomethine molecules. It has been shown that the equimolecular complexes are energetically more feasible and their structures have been discussed. The heats of complex formation reactions are correlated with the substituent constants in the aldehyde (σ^+) and aniline (σ^0) nuclei of the azomethine molecules.

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USSR

UDC 541.651:661.718.1

SHVETS, A. A., OSIPOV, O. A., AMARSHIY, E. G., and MOISEYEVA, O. A., Rostov-on-the-Don State University

"Study of the Oxides of Aromatic Phosphines and Their Complexes by Infrared Spectroscopy"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), Vyp 4, 1972, pp 829-833

Abstract: The relationship between the electro-orientation parameters σ_f and the phosphoryl vibration energy and that between the $P=O$ and extraction capacity for substituted triphenylphosphine oxides and their complexes with $ZnCl_2$ and $SnCl_4$ were studied using the IR spectra of the various species. The complexes have a general form of $ZnCl_2 \cdot 2(XC_6H_4)_3PO$. The frequency of the $P=O$ (in cm^{-1}) increases in the order $p-(CH_3)_2N$, $p-CH_3O$, $p-CH_3$, H , $p-Br$, $m-Br$, and $m-NO_2$ for the free ligand. The order remains the same for the complexes but is shifted to a lower value for the $ZnCl_2$ complexes and to a still lower wave number for $SnCl_4$ complexes. In both the triphenylphosphine oxides and their complexes there was evidence of a direct polar bond between the substituents and the phosphoryl group. This increased in going from the free ligand to the complex. The electronic effect generated by the phosphorus atom is about three times less than by the carbon atom in the caronyl group of acetophenone.

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USSR

UDC 533.697

AMARANTOVA, I. I., SADOVSKIY, V. S., TAGANOV, G. I., SHUSTOV, V. I.

"Experimental Study of Total Pressure Loss in Turning a Supersonic Flow Through a Large Angle in Curved Channels"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamics Institute), 1971, Vol. 2, No. 2, pp 11-17 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12B575)

Translation: The results of an experimental study of velocity fields and total pressures at the output of curved channels of great length are presented. Three channels with circular and rectangular cross sections were investigated. The expansion of the channel with circular cross section was 18 calibers of the internal cross section (the channel expanded slightly along the flow) and was approximately 22 calibers for the plane channel (length relative to height of the input cross section). The flow turned through an angle of 80° in the channel with circular cross section and through 72° in the channels with rectangular cross section. The ratio of the sides in the channel of rectangular cross section was 3.7. The studies were conducted for a flow rate at the input

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USSR

2/2 017

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115912

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PB(NO SUB3)SUB2 AND PB (OAC)SUB2 WERE TITRATED POTENTIOMETRICALLY WITH NA SUB2 SO SUB4 BY USING A PB AMALGAM ELECTRODE, IN THE PRESENCE OF 20-5PERCENT ETOH OR 50PERCENT ETOH, RESP. NH SUB4 NO SUB3 GREATER THAN 0.04N AND NH SUB4 OAC GREATER THAN 0.01N INTERFERED. BA(NO SUB3)SUB2 AND BA(OAC)SUB2 INTERFERE WITH THE DETN. OF THE RESP. PB SALTS; THE EQUIVALENCE POINT CORRESPONDS TO THE SUM OF PB AND BA. THE PB AMALGAM ELECTRODE CAN BE USED IN DETNS OF SO SUB4 PRIME NEGATIVE NEGATIVE AND BA PRIME POSITIVE POSITIVE.
FACILITY: KAZ. GOS. UNIV. IM. KIROVA, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--LEAD AMALGAM ELECTRODE IN THE POTENTIOMETRY OF LEAD. III.
POTENTIOMETRIC TITRATION OF LEAD BY SODIUM SULFATE -U-
AUTHOR-(02)-AMANZHOLOVA, YE.S., PROTOPOPOVA, G.D.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(1), 10-20

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--LEAD ALLOY, AMALGAM, SODIUM SULFATE, POTENTIOMETRIC TITRATION,
METAL ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0208

STEP NO--UR/0360/70/020/001/0010/0020

CIRC ACCESSION NO--AP0115912

UNCLASSIFIED

USSR

UDC: 517.514

AMANOV, T. I.

"Theorem of Imbedding and Continuation for Classes $S_{p,0}^{r^1, \dots, r^N}$ "

Teoremy Vlozheniya i Ikh Prilozheniya [Imbedding Theorems and Their Applications -- Collection of Works], Moscow, Nauka Press, 1970, pp 19-20. (Translated from Referativnyy Zhurnal Matematika, No. 8, 1970, Abstract #8878, by the author).

Translation: Functions of the classes $S_{p,0}^{r^1, \dots, r^N}$ and $S_{p,0}^{*r^1, \dots, r^N}$ are studied. Theorems of imbedding and continuation are proven for these spaces.

USSR

UDC 621.371.029.6

AMANOV, S. A., KOLARZH, V. V., CHEN, B. B., KADYROV, I., and
RAIMKULOVA, K.

"Statistical Characteristics of UHF Signal Distribution Over Open
Land and Mountain Waterways"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
Sekts. 2 (Tenth All-Union Conference on the Propagation of Radio
Waves; Report Theses; Section 2--collection of works) "Nauka," 1972
pp 13-17 (from RZh--Radiotekhnika, No 10, 1972, Abstract No
10A352)

Translation: Experimental integral functions are given for the
distribution of average-time values of the signal attenuation fac-
tor, together with results of an investigation into the daily
course of the fading range during the various months for land and
mountain waterways in the rayon of Lake Issyk-Kul'. Two illustra-
tions, bibliography of two. A. L.

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USSR

UDC 511.292+0.01.5:62-531.3

AMANGEL'DIYEV, B. R., SATSUK, V. V.

"Mathematical Modeling of the Process of Heating Metal Before Rolling"

Alma-Ata, IAN Kazakh SSR, Seriya Fiziko-Matematicheskaya, No 3, May/Jun 71,
pp 11-15

Abstract: The authors study the dynamic principles governing the process of metal heating in soaking pits with regard to the thermal state of the liner, the gas mixture, and the temperature state of the ingots. A system of equations is presented for the dynamics of the process. The results of computer solution of the mathematical model are given for five different sets of heating conditions. The proposed mathematical model can be used to predict heating time and also to optimize heating conditions. Four tables, bibliography of five titles.

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USSR

UDC 62-50

AMANGEL'DIYEV, B. R., SATSUK, V. V.

"A Combination Random Search Algorithm"

Alma-Ata, IAN Kazakh SSR, Seriya Fiziko-Matematicheskaya, No 3, May/Jun 71,
pp 6-11

Abstract: The authors discuss an algorithm of random search for the extremum (minimum) of a function of many variables. The algorithm is based on the statistical gradient method (L. A. Rastrigin, "Staticheskiye metody poiska" [Statistical Methods of Search], Moscow, "Nauka", 1968) and utilizes the idea of the method of configurations. The proposed algorithm can operate in three modes, depending on the situations which arise during search: 1) random descent with "stimulation" by randomness; 2) steepest descent; 3) general operating mode. The algorithm was checked out on a number of test functions, identification problems, and optimum control problems. Examples are given illustrating use of the proposed algorithm for finding the extremum of a function of two variables and optimum control of metal heating. Four figures, bibliography of three titles.

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- 105 -

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0137235
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ESERINE AND PROSERINE (0.05 MG-KG
I.P.) LOWERED THE CHOLINESTERASE ACTIVITY MORE IN THE CEREBRAL CORTEX
THAN IN THE OTHER PARTS OF BRAIN. PROSERINE, IN CONTRAST TO ESERINE,
WAS MORE EFFECTIVE ON HEART CHOLINESTERASE THAN ON BRAIN CHOLINESTERASE.
FACILITY: INST. TONKOI ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF ESERINE AND PROSERINE ON CHOLINESTERASE ACTIVITY IN
VARIOUS SECTIONS OF RAT BRAIN AND HEART -U-
AUTHOR--(04)-MNDZHOYAN, A.L., AMADYAN, M.G., SHIRINYAN, E.A., TSOVYANOVA,
S.T.
COUNTRY OF INFO--USSR

SOURCE--BIOL. ZH. ARM. 1970, 23(1), 3-9

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALKALOID, CHOLINESTERASE, BRAIN, CEREBRAL CORTEX, HEART,
ENZYME ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0036

STEP NO--UR/0427/70/023/001/0003/0009

CIRC ACCESSION NO--AP0137235

UNCLASSIFIED

USSR

MNDZHOYAN, A. L. and AMADYAN, M. G., Biologicheskii Zhurnal Armenii, Vol. 23, No 5, May 70, pp 3-11

N atom in its molecule, this substance depresses CE activity in the brain sections studied. Pentaphene hydrochloride is similar in effect to etpenal hydrochloride and iodomethylate, but its iodomethylate does not affect brain CE activity. It has a stronger effect on CE activity in the myocardium than does pentaphene hydrochloride. Cypenam hydrochloride does not affect brain CE activity, despite its tertiary N, but it does reduce CE activity in the myocardium more strongly than the pentaphene or etpenal hydrochlorides. Cypenam iodomethylate does not affect brain CE activity. In the series of in vitro experiments, etpenal hydrochloride and iodomethylate had an effect only at high concentrations ($1 \cdot 10^{-4}$ and $1 \cdot 10^{-5}$, respectively). Pentaphene hydrochloride and iodomethylate depress CE activity only in the myocardium and at lower concentrations. In both the in vivo and in vitro tests, cypenam hydrochloride and iodomethylate affected CE activity only in the myocardium of the ventricles. All compounds containing a quaternary N atom depressed the CE activity of the myocardium in both test series to a greater extent than compounds containing tertiary nitrogen. Of the compounds with a quaternary N atom, only proserine and etpenal iodomethylate depressed CE activity of brain tissue, a fact which indicates that these two compounds can permeate the blood-brain barrier.

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USSR

UDC 577.1:615.217

KINDZHOYAN, A. L., (Deceased) and AMADYAN, M. G., Institute of Fine Organic Chemistry, Academy of Sciences Armenian SSR

"The Effect of Etpenal, Cypenam, Pentaphene, and Their Quarternary Analogs on the Cholinesterase Activity of Various Parts of the Rat Brain and Heart"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 23, No 5, May 70, pp 3-11

Abstract: The effect of the cholinolytic properties of several compounds on the cholinesterase (CE) activity in various sections of the rat brain and heart was studied in vivo and in vitro, and the effect of these substances was compared to that of eserine and proserine. The substances were introduced intra-abdominally in the following doses: etpenal and pentaphene, 10 mg/kg, each; cypenam, 30 mg/kg; and etpenal and pentaphene iodomethylates, in equimolar concentrations at 13 and 39 mg/kg, respectively. An increase in respiration and heart rates was observed after introduction of the drugs. It was established in the series of in vitro experiments that etpenal hydrochloride inhibits CE activity in both brain and heart. The greatest inhibition was observed in the cortical region and in the myocardium of the ventricles. The inhibitory effect was less pronounced in the optic thalamus and hypothalamus. Etpenal iodomethylate had almost the same effect as its tertiary analog. Thus, in spite of the presence of a quaternary

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USSR

UDC 577:1:615.216.5

AMADYAN, M. G., MNDZHOYAN, O. L., and OVSEPYAN, M. V., Institute of Fine Organic Chemistry, Academy of Sciences Armenian SSR

"The Influence of Ditiline, Hexatoline and Subecholine on Cholinesterase Activity in Different Parts of the Rat Brain and Heart"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 23, No 6, Jun 70, pp 105-106

Abstract: In experiments with 130 white rats, the authors introduced the myo-relaxants intraperitoneally in doses evoking curareiform effects: ditiline--2.5 mg/kg, hexatoline--0.5 mg/kg, and subecholine--20 mg/kg. The animals were sacrificed after 5, 15, 30, and 60 minutes. Examination of the heart and brain showed no influence of the above drugs on cholinesterase actively. However, these drugs, given in extremely large doses, show inhibiting effects on cholinesterase in the optic thalamus and in the myocardium of ventricles.

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2/2 027

UNCLASSIFIED

PROCESSING DATE--L3NOV70

CIRC ACCESSION NO--AP0124249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF DETERMINING THE FLOW AND DEFORMATION VELOCITIES IN THE STEADY STATE PLANE ROLLING OF METALS BY REF. TO THE EXPERIMENTALLY OBSERVED FLOW PICTURE IS DESCRIBED, AND AN ALGORITHM FOR THE NUMERICAL SOLUTION OF THIS PROBLEM ON A COMPUTER IS PROPOSED. SOME TYPICAL CASES OF ROLLING ARE ANALYSED ON THIS BASIS; ONE RESULT OF THE ANALYSIS IS A CLEAR REPRESENTATION OF 'DANGER' POINTS AT WHICH THE CONTINUITY OF THE METAL BEING ROLLED MAY BE DISRUPTED BY THE ROLLING FORCES.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINATION OF DEFORMATION VELOCITIES IN ROLLING USING A COMPUTER
-U-
AUTHOR--(33)-CHELYSHEV, N.A., ALYUSHIN, YU.A., BEREZOVSKY, B.N.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z., CHERNAYA MET., 1970 (2), 80-86
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL ROLLING, COMPUTER APPLICATION, METAL DEFORMATION,
DEFORMATION RATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0554 STEP NO--UR/0148/70/000/002/0040/0036
CIRC ACCESSION NO--AP0124249
UNCLASSIFIED

Forming

USSR

UAC: 545.2

ALYUSHIN, Yu. A., Siberian Institute of Metallurgy

"Correlation of Lines of Flow and Strain Rates in Advanced Plastic Deformation Processes"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No. 5, 1970, pp 71-75

Abstract: One of the currently topical problems in the theory of plastic working of metals is the development of new methods for designing deformation processes equally applicable to various states of stress and the possibility of controlling the properties of materials. Such methods would facilitate wide use of highly efficient and economic processes of metalworking by pressure as applied to hard-to-work grades of steels and alloys. The study presents general relationships for determining the velocity vector components and the strain rate tensor through the trajectories of points given in Euler and Lagrange variables. Cases of volume deformation in rectangular Cartesian and cylindrical coordinate systems are discussed. The relationships derived are applicable to ideal rigidly plastic as well as to elastic, viscous or any other media. For a special case they may serve to derive appropriate equations for steady-state processes of two-dimensional and axisymmetric deformation as well as for the function of flow which represents a method of describing the lines of flow for incompressible media.

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Acc. Nr: AP0044181

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal, 1970, Vol 56,
Nr 1, pp 19-25

BRAIN TISSUE RESPIRATION IN HYPOTHERMIA

By Yu. S. Alyukhin and M. K. Kalina

From the I. P. Pavlov Institute of Physiology, USSR Ac. Sci., Leningrad

The venous outflow method and blood gas analysis were used to investigate brain oxygen uptake in un-anaesthetized rats at brain temperatures 37°, 27° and 20° C under conditions of breathing normal air or hypoxic gas mixture, containing 6% O₂. The simultaneous determination of brain venous pO₂ was made by means of a polarographic electrode. The modification of Krogh-Erlang's formula was used to calculate the lowest pO₂ of the brain tissue. It was shown that brain oxygen uptake in hypothermia decreases linearly with temperature fall. Although the blood pO₂ in hypothermia falls, the lowest brain tissue pO₂ remains at the normal level. Nevertheless at brain temperature 27° some oxygen deficiency is possible because of a relative increase of the brain oxygen need. At brain temperature 20° the brain oxygen uptake remains unchanged even when the brain venous pO₂ falls up to 9 mm Hg, and the lowest brain tissue pO₂ up to 5 mm Hg. The causes of this independence and of the related increased resistance of hypothermic animals to hypoxia are discussed.

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REEL/FRAME
19770666

2 MT

USSR

UDC 591.112.2

AVAZBAKIYEVA, M. P., and RYMZHANOV, K. S., Kazakh State University
imeni S. M. Kirov

"Electrocardiogram of Dogs Exposed to Progressive Hypoxia"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Biologicheskaya, No 1, 1970, pp 60-62

Abstract: Electrocardiograms were recorded in 18 dogs while they were exposed to steadily increasing hypoxia (elevation to simulated altitudes of 1000-9000 m above sea level). At 1000 and 2000 m, no changes were detected in excitability and conduction of excitation in the myocardium. At 3000-6000 m, the EKG showed a decrease in the voltage of the P and R waves. The PQ and QRS intervals were more or less unchanged. The Q-T interval was slightly shortened, while the systolic index grew. The voltage of the S and T waves decreased. At 5000 m, the positive T wave became isoelectric in a number of cases, but at 6000 m changed to negative. The PQ and QRS waves remained almost unchanged, while the Q-T interval decreased. The systolic index increased up to 6000 m, but decreased at 7000-9000 m. At the same time, the voltage of the P and R waves decreased to 1/2

USSR

UDC 612.322.1

ALYUKHIN, YU. S., and KALININA, M. K., Laboratory of Temperature Regulation, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR

"Brain Tissue Respiration During Hypothermia"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, No 1, 1970, pp 19-25

Abstract: Oxygen consumption by the brains of nonanesthetized white rats was determined by shifts in venous outflow and by analysis of blood gases at brain temperatures of 20, 27 and 37° C, while the animals breathed air or a hypoxic mixture. The brain venous blood pO_2 was measured at the same time. Oxygen consumption decreased as a result of cooling in direct proportion to the drop in temperature. The blood pO_2 decreased during hypothermia but even the lowest brain tissue pO_2 remained close to the normal level. During deep hypothermia (20° C), oxygen consumption by the brain was independent of both the brain venous blood pO_2 (in a range of 9-32 mm Hg), and the lowest brain tissue pO_2 (in a range of 5-28 mm Hg). During moderate hypothermia (27° C) a slight oxygen insufficiency developed, due to the brain's increased need for oxygen.

1/1

272 018 UNCLASSIFIED PROCESSING DATE--02JCT70
CIRC ACCESSION NO--AP0104285
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THIS SYSTEM, SOLID CO(NO
SUB3)SUB2 .6H SUB2 O IS EQUIL. WITH AN AQ. SOLN. THE COMPN. OF WHICH
VARIES IN THE RANGE CO(NO SUB3)SUB2 47.96 PLUS NH SUB4 NO SUB3 3.9 WT.
PERCENT TO CO(NO SUB3)SUB2 41.5 PLUS NH SUB4 NO SUB3 27.7 WT. PERCENT.
AT AQ. PHASE COMPNS. OF CO(NO SUB3)SUB2 40.4 PLUS NH SUB4 NO SUB3 29.8
WT. PERCENT TO CO(NO SUB3)SUB2 5.95 PLUS NH SUB4 NO SUB3 58.42 WT.
PERCENT, NH SUB4 NO SUB3 IS THE ONLY COMPONENT OF THE SOLID PHASE. A
MIXT. OF BOTH SALTS WAS IN PHASE EQUIL. WITH SOLNS. CONTG. 40.7-40.8 WT.
PERCENT CO(NO SUB3) SUB2 AND 28.2-29.3 WT. PERCENT NH SUB4 NO SUB3.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--SOLUBILITY IN A COBALT NITRATE, AMMONIUM NITRATE AND WATER SYSTEM AT
20DEGREES -U-
AUTHOR--(03)-ALYMOVA, L.N., KORF, D.M., LEBEDEVA, N.D.
COUNTRY OF INFO--USSR *A*
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 458-9
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TERNARY FLUID SYSTEM, AQUEOUS SOLUTION, SOLUBILITY, AMMONIUM
NITRATE, COBALT COMPOUND, PHASE COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1037/0349 STEP NO--UR/0030/10/043/002/0458/0459

CIRC ACCESSION NO--AP0104285
UNCLASSIFIED

USSR

ALYMOVA, A. T., et al, Doklady Akademii Nauk SSR, Vol 196, No 4, 1971, pp
840-843

values of the constant (C) is presented for the mentioned cation-exchange and anion-exchange resins and Zerolite. The mechanism of variation of the electrical conductivity is discussed.

UDC 541.13

USSR

ALYMOVA, A. T., MELESHKO, V. P., and SHATALOV, A. Ya.

"Problem of the Concentration Dependence of the Electrical Conductivity of Ion-Exchange Resins"

Moscow, Doklady Akademii Nauk SSR, Vol 196, No 4, 1971, pp 840-843

Abstract: The problem of quantitative calculation of the concentration dependence of the electrical conductivity of ion exchange resins is considered analytically and experimentally in this paper. An equation for this relation is obtained in the form

$$\bar{\chi}(C) = \bar{\chi}(\infty)C^{\alpha},$$

or

$$\chi(C) = \bar{\chi}(\infty) \exp(-\beta/C).$$

where the constants α and β can be found graphically by data obtained from measuring the electrical conductivity of the given ion-exchange resin. Measurements were performed using cation-exchange resins KU-2 and KU-2P and anion-exchange resins AV-17 and AV-17p with varying contents of crosslink-forming DVB and various acids and bases. The checks were made for a limited concentration range of the external solution from 0.01 N to 0.5 N. A table of

1/2

USSR

ALYMOV, A. V., et al., Priory i Tekhnika Eksperimenta, No 1, Jan-Feb 72,
pp 185-187

pickups of the device register changes in the length of specimens by changing load or temperature, the developed power of the press, and the susceptibility of the specimen under pressure by changing temperature. The phase transition curves of the RbI salt under pressure at 293, 77, and 4.2 °K are shown. Four illustr., one biblio. ref.

2/2

USSR

UDC 536.42

ALYMOV, A. V., LAUKHIN, V. N., RABIN'KIN, A. G., and
SMIRNOVA, A. S., Institute of Chemical Physics of the Academy
of Sciences USSR

"Device for the Investigation of Phase Transitions Pressurized
up to 40 kbar in a 2--400 °K interval"

Moscow, Priory i Tekhnika Eksperimenta, No 1, Jan-Feb 72,
pp 185--187

Abstract: A press designed for the investigation of supercon-
ductivity, compressibility, and phase transitions of first and
second type of different materials under pressures up to 40 kbar
is described by reference to its layout. The design of the press
makes it possible to change the load on specimens smoothly and
reversibly from 0 to 2.5--3 tons in a 2--400 °K temperature in-
terval. Unlike the generally in magnetic measurements under pres-
sure used beryllium bronze, the high-pressure chamber and punches
are made of the new 40KhNi non-magnetic dispersion-hardening
material (HRC 59--60, tensile strength up to 200 kg/mm²). The
1/2

2/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AA0132087
ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT, STEEL IS ALLOYED ZR BY INTRODUCING
A ZR CONTG. ALLOY WITH PARTICLE DIMENSIONS SMALLER THAN OR EQUAL TO 20
UM SMALLER THAN OR EQUAL TO 1PERCENT ON THE LIQ. STEEL WT. AND A MIXT.
CONTG. 3 PARTS CRYOLITE TO 1 PART FLUCRITE LARGER THAN OR EQUAL TO
0.1PERCENT ON THE LIQ. STEEL WT. INTO THE MOLD. FACILITY:
TSENTRAL'NYI NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT CHERNOY METALLURGI IM.
I. P. BARDINA.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--METHOD OF ALLOYING STEEL -U-
AUTHOR--(95)-SPUSHLEGIN, S.A., KOZLOV, N.P., ALYMOV, A.A., PALCHENKO, T.V.,
KRYAZEV, V.N.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,634
REFERENCE--OTKRYITIYA, IZOBRETI., PROB OBRATZSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CHEMICAL PATENT; CRYOLITE, FLUORITE, ALLOY STEEL, ZIRCONIUM
STEEL, STEEL MANUFACTURE PROCESS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1822 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0132087
UNCLASSIFIED

USSR

UDC 669.183.218.5

TRUBETSKOV, K. M., TARASOV, V. M., ALYMOV, A. A., MOKRUSHIN, K. D., TAT'YANSHCHIKOV, A. G., CHIZHOVA, V. YA., and YAKUSHIN, V.I.

"Material Balance of the Process in Dual-Bath and Open-Hearth Furnaces"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 68-73

Translation: A method of determining the yield of usable steel and consumption of metal charge is studied, as well as the methodology of experimental melts with material balance. Data are presented on the consumption of iron in dual-bath and open-hearth furnaces operating with intensive blowing of the bath with oxygen. The yield of iron in a dual-bath furnace is 93.6%, in an open-hearth furnace--93.5%. 2 tables; 3 biblio. refs.

USSR

UDC 669.14

SMOLYANENKO, D. A., KARPUSHIN, K. A., SEMENOV, Yu. N., D'YAKOVNA, V. S. and
ALIMOY, A. A.

"Investigation and Modern Production of Quality Low-Carbon Remelted Steel for Cold Rolling, in High-Capacity Martin Furnaces"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No. 01, 1970, pp 91-101

Translation of Abstract: Results are presented of an investigation of test smeltings of A42K steel. The most promising way of increasing the quality of low-carbon remelted steel, the furnace quality and the quality of physical-chemical properties, incl. the low propensity to scale in the decarburization of the steel in a large high-capacity Martin furnace, are electric furnace treatment. 5 figures, 1 table, 4 references.

1/3

- 44 -

USSR

UDC 669.183.218.5

TRUBETSKOV, K. M., TARASOV, V. M., ALYMOV, A. A., MOKRUSHIN, K. D., TAT'YANSHCHIKOV, A. G., CHIZHOVA, V. YA., and YAKUSHIN, V.I.

"Material Balance of the Process in Dual-Bath and Open-Hearth Furnaces"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 68-73

Translation: A method of determining the yield of usable steel and consumption of metal charge is studied, as well as the methodology of experimental melts with material balance. Data are presented on the consumption of iron in dual-bath and open-hearth furnaces operating with intensive blowing of the bath with oxygen. The yield of iron in a dual-bath furnace is 93.6%, in an open-hearth furnace--93.5%. 2 tables; 3 biblio. refs.

1/1

USSR

UDC 616-005.1+612.275.1

ALYMKULOV, D. A., Kirgiz Scientific Research Institute for the Protection of Mothers and Children, and Kirgiz State Medical Institute

"Gas Exchange and Hemodynamics After Blood Loss in High Mountains in Ontogeny"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 4, Jul/Aug 70, pp 17-20

Abstract: Puppies of various ages and adult dogs (as a control) were taken to a mountain pass (3200 m above sea level) and, after 3 to 6 days, were bled (total blood loss, 2% of body weight). Arterial and venous pressures, blood flow, hematocrit, hemoglobin concentration, and other hematologic indices were measured over a period of 7 days. The adult dogs developed all of the signs of circulatory hypoxia, but 24 hours later cardiovascular function and gas exchange were normal. The 2- to 3.5-month-old puppies reacted to the bleeding in the same way as the older animals, but restoration was somewhat slower, an indication of incompletely developed compensation mechanisms. Puppies under 2 months of age were most sensitive to blood loss. For example, arterial pressure dropped to a critical level within 30 minutes and remained low for more than 2 hours. Since the compensatory-adaptive mechanisms of the cardiovascular system were undeveloped, these animals were unable to compensate the hemorrhagic collapse and 9 of the 30 animals died. Blood flow was very slow and gas exchange severely impaired in the survivors.

1/1

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128637

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF CO ACETATE OF HALIDE WITH PICOLINIC, NICOTINIC, OR ISONICOTINIC ACID (PICH, NICH, OR INICH, RESP.) GAVE COCLPIC, COPIC SUB2, COCL SUB2 NIC SUB2, CONIC SUB2, COCL SUB2 INIC SUB2, AND COINIC SUB2. THE BIDENTATE LIGAND PIC COORDINATES TO CO VIA N AND O AND NIC VIA 2 O OF THE CO SUB2 PRIME NEGATIVE GROUP. COCL SUB2 INIC SUB2 FORMS LONG CHAINS (1) BY COORDINATION OF INIC TO COCL SUB2 BY N AND BY FORMATION OF INTERMOLECULAR H BONDS. FACILITY: TASHKENT. GOS. MED. INST., TASHKENT, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INFRARED ABSORPTION SPECTRA OF COMPLEXES OF CADMIUM HALIDES WITH
PYRIDINECARBOXYLIC ACID DERIVATIVES -U-
AUTHOR-(02)-ALYAVIYA, M.K., TEPLYAKOVA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 958-60

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, CADMIUM COMPLEX, PYRIDINE, CARBOXYLIC ACID,
HYDROGEN BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1219

STEP NO--08/0078/19/015/004/0158/0960

CIRC ACCESSION NO--AP0128637

UNCLASSIFIED

USSR

UDC: 620.171.2

MANDEL', V. S., ALYANSKIY, R. I., TROTSSENKO, V. Ya., Nikolayev

"Limiting Rotating Speed of Closed Radial Turbine Wheel"

Kiev, Problemy Prochnosti, No 3, Mar 73, pp 74-80.

Abstract: Methods of limiting equilibrium are used to design a closed radial wheel, the rupture of which can occur in various forms. Mechanisms of loss of load-bearing ability are studied and calculation formulas are produced for the cases of combined rupture of the main and cover discs, rupture of the cover disc both without bending and with bending with rupture of the axial coupling between it and the main disc, and also for rupture of the blades. Various conditions of blade attachment are considered, as well as the longitudinal forces arising in blades with curvature. The results of calculations and experiments are compared.

1/1

USSR

UDC: 62-215-253:624.046

ALYANSKIY, R. I., MANDEL', V. S., Nikolayev

"Maximum Rotating Speed of Conical Turbine Machine Rotor Envelopes"

Kiev, Problemy Prochnosti, No 3, Mar 73, pp 81-86.

Abstract: The limiting equilibrium of conical envelopes of constant thickness loaded with centrifugal and axissymmetrical contour forces and pressure is studied. Relationships are produced for determination of the maximum rotating speed with various conditions of attachment of the outer edge, from which graphs are constructed and recommendations are given for design of envelopes considering their interaction with other elements of the turbine machine rotor.

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0137863

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. HIGHLY METALLIZED SALTS OF 3, 3 PRIME, 3 PRIME PRIME, 3 PRIME PRIME PRIME, (II), 4, 4 PRIME, 4 PRIME PRIME, 4 PRIME PRIME PRIME, TETRAHYDROXYPHTHALOCYANINE CU COMPLEX (IA) AND OF 3, 3 PRIME, 3 PRIME PRIME, 3 PRIME PRIME PRIME, 6, 6 PRIME, 6 PRIME PRIME, 6 PRIME PRIME PRIME, OCTAHYDROXYPHTHALOCYANINE CU COMPLEX (III) ARE PREPD. IN 90-5PERCENT YIELD BY REACTION WITH SULFATES OF CU, BE, FE, CA, BA, CO, NI, SR, AND CD. FOR EXAMPLE, III AND IV ARE PREPD. BY ADDING A SOLN. OF CUSO SUB4 (150 G-L) TO A SOLN. OF 1.45 G OF THE NA SALT OF I OR IA IN 200 ML H SUB2 O (OR TO 1.76 G OF THE NA SALT OF II IN 700 ML H SUB2 O), AND HEATING TO BOILING UNTIL A COLORLESS SAMPLE IS NOTED ON A FILTER PAPER TEST. THE PPT. IS FILTERED, WASHED WITH H SUB2 O, ETOH, AND ME SUB2 CO, AND DRIED AT 100-20DEGREES. THE CONTENT OF PERIPHERAL METAL RANGES FROM 2.3-4.4PERCENT FOR BE TO 20.1-32.7PERCENT FOR SR. THE SALTS DO NOT MELT AT SMALLER THAN 500DEGREES AND ARE INSOL. IN H SUB2 O AND ORG. SOLVENTS. THEY IGNITE IN AIR AT 450-600DEGREES AND BURN WITHOUT FLAME. THE IR SPECTRA OF THE FE AND CU COMPLEXES CONFIRM THE PROPOSED STRUCTURES, AND INDICATE DISAPPEARANCE OF A NO. OF BANDS CHARACTERIZING THE HYDROXY PRODUCTS OF COPPER PHTHALOCYANINE.

FACILITY: IVANOV. KHIM. TEKHNOL. INST., IVANOV, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PREPARATION OF HIGHLY METALLIZED SALTS OF OXY DERIVATIVES OF COPPER
PHthalOCYANINE -U-
AUTHOR-(02)-ALYANDV, M.I., BORODKIN, V.F. A

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2),
248-51
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHthalOCYANINE, COPPER COMPLEX, SULFATE, HYDROXYL RADICAL, IR
SPECTRUM, IRON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--3008/0834

STEP NO--UR/0153/70/013/002/0248/0251

CIRC ACCESSION NO--AT0137863

UNCLASSIFIED

USSR

AL'YANOV, M. I., et al., Izvestiya Vysshykh Uchebnykh Zavedeniy -- Khimiya
i Khimicheskaya Tekhnologiya, Vol 14, No 10, 1971, pp 1606-1608

obtained are ground up and the impurities formed due to some decomposition
are extracted with acetone until colorless crystalline material is obtained.

2/2

- 28 -

USSR

UDC 547.559+668.819

AL'YANOV, M. I., BORODKIN, V. F., BENDERSKIY, V. A., and KHOYNOV, YU. I.,
Ivanovo Chemical-Technological Institute, Branch of the Institute of Chemical
Physics, Academy of Sciences USSR, Chair of Chemical Technology of Organic
Dyes and Intermediate Products

"Metalphtalocyanine Purification Method by Means of Vacuum Distillation "

Ivanovo, Izvestiya Vysshykh Uchebnykh Zavedeniy -- Khimiya i Khimicheskaya
Tekhnologiya, Vol 14, No 10, 1971, pp 1606-1608

Abstract: A method was developed for the sublimation of large amounts of
metalphtalocyanines. The novelty of the process is in the introduction of a
heat conducting filler into the metalphtalocyanine mass. The apparatus
used in this process is described. It consists of a housing with a constricted
"tail" portion, a flange, a setup for performing condensation and crystal
collection, a condenser, thermal insulator and a heating unit. The material
to be purified, including the heat conducting filler is loaded in a tray
and inserted into the apparatus. It is followed by the removable receiver.
The unit is hermetically sealed, evacuated, and heated slowly to 450°. The
receiver then is pulled into the cold portion of the apparatus and the
heating continued up to 525°C. Then the apparatus is cooled, the crystals

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USSR

UDC 539.893:548.733

ALYAMOVSKIY, V. N., KIRKINSKIY, V. A., FURSENKO, B. A.

"High-Pressure X-Ray Chamber"

Moscow, Pribery i Tekhnika Eksperimenta,

No 6, 1971, pp 166-169

Abstract: A new high-pressure x-ray chamber is described which is similar to one introduced earlier [S. S. Kabalkin, et al., Dokl. AN SSSR, Vol 176, No 5, 1044, 1967]. The new chamber permits Debye powder diagrams of substances to be obtained under conditions of quasihydrostatic compression to 200 kilobars. The chamber is simple to manufacture and is distinguished by complete autonomy and small size. The primary advantages of the proposed design include the following: 1) it is simple to manufacture; 2) it is completely autonomous; 3) it is small in size; 4) it is convenient to install on series x-ray equipment inasmuch as an awkward hydraulic press is not required to create forces; 5) it is possible to maintain constant pressure in the sample for a prolonged period of time as opposed to hydraulic systems in which the force decreases noticeably during exposures of 24-48 hours as a result of leakage of the working fluid through the seals; 6) self-centering of the anvils relative to each other and relative to the cartridge with the photographic film; 7) automatic satisfaction of the condition of parallelness of the operating surfaces of the anvils; 8) the possibility of combining high pressures with shears in the

1/2

- 140 -

USSR

UDC 546.821'21'26

BOGOMOLOV, G. D., LYUBIMOV, V. D., SHVEYKIN, G. P., and ALYAMOVSKIY,
S. I. Institute of Chemistry, Ural Branch of the Academy of
Sciences USSR

"Physicochemical Properties of Titanium Oxy-carbides"

Moscow, Neorganicheskiye Materialy, Vol 6, No 11, Nov 70, pp
1961-1963

Abstract: A study was made of the stability of a series of TiC_xO_y preparations toward acids, and alkalies, and also to air oxidation. Ti, C_{bound}, C_{free}, and N₂ levels were determined in preparations made by vacuum sintering of mixtures of starting oxide $TiO_{1.03}$ and carbide $TiC_{0.84}$ to form tablets 10 x 10 mm in size. TiC_xO_y preparations were found to be stable toward concentrated and dilute HCl and H₂SO₄, both at room temperature and at elevated temperatures. The oxycarbide $TiC_{0.57}O_{0.44}$ proved to be most acid-resistant of the hot-pressed samples. The oxycarbide $TiC_{0.57}O_{0.44}$ showed the greatest resistance to air oxidation at 950, 1100, and 1250° C.

1/1

USSR

UDC 546.821'26'21

BOFOMOLOV, G. D., ALYAMOVSKIY, S. I., SHVEYKIN, G. P., and LYUBIMOV, V. D.,
Institute of Chemistry, Ural Branch of the Academy of Sciences USSR

"Certain Structural Characteristics of Cubic Titanium Oxycarbide"

Moscow, Neorganicheskiye Materialy, Vol 6, No 8, Aug 70, pp 1405-1408

Abstract: This report presents information on the area of single-phase existence, concentration dependence of lattice periods, and degree of filling of the elementary TiC_xO_y unit cell. Seventy specimens were made by pressing carefully ground mixtures of the initial components, followed by sintering at $1500^{\circ}C$ and 10^{-7} mm Hg for 30-50 hr. Sixty of the specimens were found to be single-phase specimens. The specimens were subjected to X-ray and chemical analysis. A phase diagram of the $Ti-TiC_{1.3}-TiO_{1.3}$ system at $1500^{\circ}C$ and $p = 10^{-3}$ mm Hg is presented. Data on the full mutual solubility of cubic TiC_x and TiO_y phases accompanied by formation of the TiC_xO_y oxycarbide are confirmed. It is assumed that the concentration dependence of the lattice periods of TiC_xO_y is complex. The linearity of the function $n_0 = f(x)$ is confirmed, where n_0 is the number of carbon particles in a TiC_xO_y unit cell. 1/1

USSR

ZAYNULIN, Yu. G., et al, Zhurnal Neorganicheskoy Khimii, Vol 16, No 2, 1971, pp 315-317

It was found that at 1,500°C and 10^{-5} mm pressure, the domain of homogeneity of zirconium oxynitride with NaCl structure is limited ($y_{\max} \approx 0.3$, while the lattice periods, within these limits, vary only very slightly (from 4.574 to 4.575 Å). For ZrN_xO_y , vacant points are a distinctive feature, both in the sublattice of the metal and in that of the nonmetal.

USSR.

UDC 546.831.171.1-21

ZAYNULIN, YU. G., ALYAMOVSKIY, S. I., SHVEYKIN, G. P., GEL'D, P. V.

"Domain of Homogeneity of Zirconium Oxynitride With NaCl Structure, at 1,500°C"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 16, No 2, 1971, pp 315-317

Abstract: The binary systems Zr-N and Zr-O have been studied in detail; however, there is no information on the ternary system, and especially its cubical component (of NaCl type). Only a few papers have appeared dealing with certain characteristics of ZrN_xO_y with low oxygen content, and those dealing with partial ZrO_2 -ZrN systems.

Using 99.9 percent pure ZrO_2 and oxynitrides of composition $ZrN_{0.76}O_{0.12}$ and $ZrN_{0.87}O_{0.12}$, and also 99.9 percent pure Zr powder as starting materials, the authors prepared samples for X-ray analysis and determination of Zr and N content.

1/2

USSR

UDC 54-162.2:546.824'26'21

ALYAMOVSKIY, S. I., ZAYNULIN, YU. G., SHVEYKIN, G. P., and GEL'D, P. V.,
Institute of Chemistry UNTs, Academy of Sciences USSR

"Concentration Relationship of the Degree of Filling the Unit Cell in Cubic
Titanium Oxycarbide"

Moscow, Neorganicheskiye Materialy, Vol 9, No 4, Apr 73, pp 596-599

Abstract: Results are reported on a study of the effect of composition on the completeness of the TiC_xO_y lattice for $x + y = 0.7$ to $x + y = 1.2$, which practically encompasses the entire region of homogeneity for titanium oxycarbide. The characteristics of 39 samples of TiC_xO_y were used (13 from this work and 26 from previous works) to determine the equations for oxycarbides with $x + y$ equal to 0.70-1.20 using the relationship $n_{Ti} = f(x)$ and components A, B, and C yielding $n_{Ti} = Ax^2 + Bx + C$. It is noted that twinning defects exist in the lattices of oxygen-containing cubic tricomponent phases of transition metal-base oxycarbides and nitrocarbides. 1 figure, 3 tables, 22 bibliographic references.

1/1

USSR

UDC 632.95

SIMONOV, V. D. MAMINA, F. A., GERASIMOVA, A. I., ALYAMKIN, YU. N., AKHUNOV, T. F., and VYAZOVKINA, G. I.

"Determination of the Basic Substance in Herbicidal Preparations of Yalan"

V sb. Probl. analit. khimii (Collection of Works: Problems of Analytical Chemistry), Vol 2, Moscow, Nauka, 1972, pp 138-142 (from Referativnyy Zhurnal -- Khimiya, Svochnyy Tom, No 23(II), 1972, Abstract No 23N449 by T. A. Belyayeva)

Translation: The application of gas chromatography, spectroscopic, and titrimetric methods to determination of the basic substance in the oil emulsion and granulated preparations of yalan was evaluated. Using a thermal conductivity detector, the gas chromatography is carried out at the column temperature of 190°C, with the gas carrier (H_2) flow rate of 240 ml./min. Heat-insulating silanized brick is used the solid phase apiezon M with stearic acid is used as an immobile liquid phase. The relative error of determination does not exceed 3.4%. A study of the IR yalan spectra and of accompanying components indicated that the band 1412 cm^{-1} can be used successfully. The titrimetric method is based on the hydrolysis of S-ethyl N-hexamethylenethiocarbamate at 130°C in the presence of 85% orthophosphoric acid followed by determination of the imine formed with the acid-alkaline titration (0.1 N solution of H_2SO_4 with methyl red indicator). The determination error does not exceed 1.6%.

1/1

ALYAKRINSKIY, B. S.

THE PROBLEM OF LATENT DESYNCHRONOSIS

[Article by B. S. Alyakrinskiy, Moscow, *Psichologiya i fiziologiya cheloveka*, Vol. 6, No. 1, pp. 32-37, 1972, submitted for publication 1 Oct. 1971]

UFG 62-57
 100-66701-1
 100-66701-1

Abstract: This paper deals with the problem of adaptation of the human body to physical and social time sensors. The body response to the effect of physical time sensors is the so-called adequate circadian rhythm. Under conditions of social life the circadian rhythms in the human body are regulated by constant time sensors. In acute disturbances of the customary system of time sensors the body is in a state of marked desynchronization, the elimination of which does not mean a restoration of body well-being. The varied inertia of body vital functions makes it difficult to detect a state of internal desynchronization by routine techniques, although a thorough investigation of this is of great practical importance for diagnostics.

One of the fundamental control problems in any living system is establishing and stabilizing the phase relationships of the rhythms of those processes which constitute the content of its functional organization. The architectonics of these phase relationships is essentially organized. The arrangement of it deprives the body of that state which is known as called homeostasis. A peculiarity of the matching of body functions is a relative consistency of the arrangement of their phases on two time axes and accordingly a virtual invariability of the phase angle characterizing the timing sequence of functions. Different tissues, organs and their systems, the functioning of body living does not mean their simple phase synchronization. However, such synchronizing could actually preclude the possibility of effective body adaptation to the environment. The absence of necessity in the synchronous course of endogenous diurnal fluctuations in individual parts of the body is becoming increasingly clearer in a study of animal and human bodies. Indeed, in individual organs the rhythms naturally transpire in such a way as to ensure the best condition for the ordered interaction of organs in a given individual (the synchronizing, level). The diurnal rhythms of different physiological processes

USSR

UDC: 681.327.02

ALYAKRINSKIY, B. B., NAUMCHENKO, V. V., Institute of Automation and Remote Control (Technical Cybernetics)

"An Information Accumulator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 4, Feb 71, Author's Certificate No 292194, Division G, filed 1 Jul 69, published 6 Jan 71, p 139

Translation: This Author's Certificate introduces an information accumulator which contains series-connected registers and coupling circuits between them. Each of the registers is based on flip-flops and contains a circuit for resetting the register to zero. As a distinguishing feature of the patent, the device is simplified by incorporating into each register of the accumulator a circuit for shaping a signal on the state of the register based on NOT and OR elements and on a delay element. The inputs of the OR elements are connected to the working arms of all flip-flops in the register, and the output is connected through a delay element to the circuit for resetting the given register to zero and to the input of the NOT element. The output of the NOT element is connected to the circuit for resetting the preceding register to zero, and to the corresponding circuit for the following register.

1/1

2/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0133296
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEMOLYMPH OF P. CORNEUS AMOUNTS, ON THE AVERAGE, TO 31.3PERCENT OF THE WEIGHT OF BODY WITH SHELL AND TO 40.0PERCENT OF THE WEIGHT OF SOFT TISSUE. THE SPECIFIC WEIGHT OF HEMOLYMPH IS 1.007 G-ML, THE REACTION OF MEDIUM IS WEAK ALKALINE; HEMOGLOBIN WHOSE AVERAGE CONCENTRATION IS 0.69 G PERCENT IS IN THE SOLUBLE STATE IN THE HEMOLYMPH AND, AS SHOWN BY ELECTROPHORETIC STUDIES, CONTAINS ONE LARGE PROTEIN FRACTION. THE CONTENT OF HEMOGLOBIN AMOUNTS, ON THE AVERAGE, TO 2.06 G PER KG OF THE WEIGHT OF BODY WITH SHELL AND 2.67 G PER KG OF THE WEIGHT OF SOFT TISSUE. BY THIS INDEX, PLANOGBIS IS CLOSE TO RAPIDLY SWIMMING FISHES, SUCH AS TROUT (2.7 K-KG), GARFISH (2.3 G-KG) AND PIKE (1.5 G-KG). FACILITY: INST. EVOL. ANIM. MORPHOL. ECOL., ACAD. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--QUANTATIVE CHARACTERISTICS OF THE HEMOLYMPH AND HEMOGLOBIN IN
PLANORBIS CORNEUS, GASTROPODA, PULMONATA -U-
AUTHOR--ALYAKRINSKAYA, I.O.

COUNTRY OF INFO--USSR

SOURCE--ZOOLOG ZH 49(3): 349-353. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMOGLOBIN, LYMPHATIC SYSTEM, BLOOD, GASTROPODA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1340

STEP NO--UR/0439/70/049/003/0349/0353

CIRC ACCESSION NO--AP0133296

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CLINICAL PICTURE OF MIXED RESPIRATORY VIRAL INFECTIONS IN YOUNG CHILDREN TREATED IN A PEDIATRIC HOSPITAL WITH A DIAGNOSIS OF ACUTE CATARRH OF THE RESPIRATORY TRACT AND PNEUMONIA WAS STUDIED. VIROLOGICAL, SEROLOGICAL AND IMMUNOFLUORESCENT INVESTIGATIONS WERE DONE. A TOTAL OF 208 PATIENTS 3 WK TO 3 YR OF AGE WERE EXAMINED. MIXED VIRAL RESPIRATORY INFECTION WAS CONFIRMED IN 21 PATIENTS. IN 12 OUT OF 21 PATIENTS, ADENOVIRAL INFECTION AND INFLUENZA WERE DIAGNOSED, IN 9 CHILDREN THERE WAS A COMBINATION OF ADENOVIRAL INFECTION WITH PARAINFLUENZA. IN THE MAJORITY OF PATIENTS (15) MARKED CLINICAL SYMPTOMS OF VIRAL RESPIRATORY DISEASES WERE CONFIRMED BY LABORATORY METHODS. CLINICAL DIAGNOSIS OF MIXED VIRAL RESPIRATORY INFECTIONS IS STILL VERY DIFFICULT. FREQUENT DEVELOPMENT OF PNEUMONIS (IN 12 OUT OF 21) WAS NOTED IN MIXED RESPIRATORY VIRAL INFECTIONS. THERE WAS SEEN A TENDENCY TO RUN A PROTRACTED COURSE IN PATIENTS WITH MANIFESTATIONS OF ALLERGY AND OFTEN IN CHILDREN HAVING HAD THE DISEASE BEFORE. FACILITY: P. M. BUIKO RES. INST. PEDIAT. OBSTET. GYNECOL., KIEV, USSR.

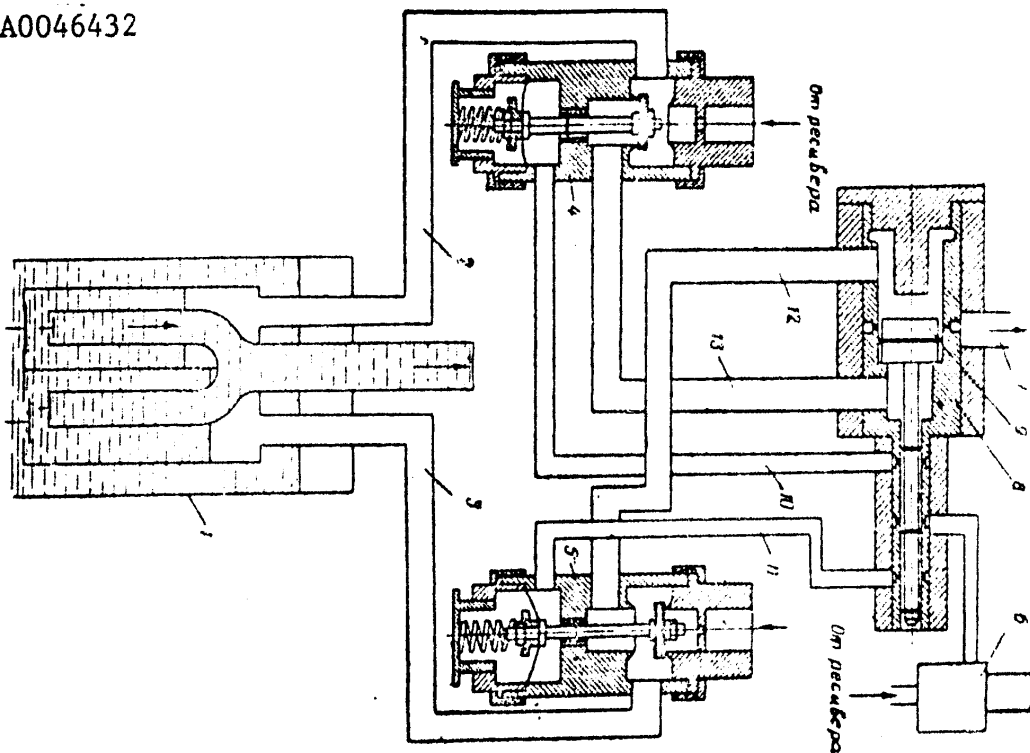
UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MIXED ACUTE RESPIRATORY VIRAL INFECTIONS IN YOUNG CHILDREN -U-
AUTHOR-(03)-ALYABYEVA, M.N., KUCHEROVA, N.T., NETREBA, N.I.
COUNTRY OF INFO--USSR
SOURCE--PEDIATRIYA 49(1): 6-10, 1970
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEDIATRICS, RESPIRATORY SYSTEM DISEASE, VIRUS DISEASE,
SEROLOGIC TEST, IMMUNOFLOURESCENCE, ADENOVIRUS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/0428 STEP NO--UR/0546/70/049/001/0006/0010
CIRC ACCESSION NO--AP0134196
UNCLASSIFIED

AA0046432



13781650

AA0046432

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

242676 PNEUMATIC PUMP UNIT comprises chambers 1
connected to air distributors 4 & 5 by pipes
2 & 3. The distributors communicate with a receiver,
and a pressure regulator 6, or are connected to
atmosphere via hole 7 and valve 8 with step plunger
9. The plunger is controlled by exhaust air fed to
the valve from the distributor via pipes 10-13.

31.1.67 as 1130000/24-6, D.V. ALYAB'EV. (8.9.69) Bul 15/
25.4.69. Class 59c. Int.Cl.F 04f.

1/2

18

19781649

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70
 CIRC ACCESSION NO--AP0105640
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF FRETTING CORROSION WERE STUDIED BY RUBBING 2 PIECES OF STEEL AGAINST EACH OTHER. THE RESULTS OF THE FRETTING CORROSION CAN BE DIVIDED INTO 3 ZONES: (1) THE ZONE OF CONTACT, (2) THE ZONE OF PRIMARY EFFECT LYING IMMEDIATELY BELOW THE ZONE OF CONTACT, AND (3) THE ZONE OF SECONDARY EFFECT BELOW THAT. IN ZONE (1) WERE FOUND ELEMENTS OF THE DEFECTIVE STRUCTURE ALONG WITH TRACES OF SLIPPAGE APPEARING AS GROUPS OF PACKETS DISSECTING THE STRUCTURE GRAINS IN ONE OR MORE DIRECTIONS AND FORMING ORTHORHOMBIC CELLS. ZONE (2) DOES NOT PARTICIPATE IN THE CONTACT BUT IS SUBJECT TO CONSIDERABLE STRAINS AND STRESSES. THE STRUCTURE OF THIS ZONE IS SUBJECT TO ALTERNATING TANGENTIAL STRESSES WHICH CAUSES SLIPPAGE IN FAVORABLY ORIENTED GRAINS, DEFECTS IN PACKING, AND TWINNING. IN ZONE (3) THERE WAS NO TRANSYCRYST. SLIPPAGE AND THERE WAS ONLY DISLOCATION OF STRUCTURE FREQUENTLY FOUND IN AREAS OF MODERATE DEFORMATION. THE WEAKENING OF METAL SUBJECT TO FRETTING CORROSION PROCEEDS IN THE FOLLOWING STEPS: THE PROCESSES OF EXTRUSION AND INTRUSION CHARACTERISTIC FOR ALTERNATING SIGN LOADS CAUSE THE APPEARANCE OF NEW SURFACE WHICH OXIDIZE IMMEDIATELY. MOLES. OF O ARE ADSORBED ON THE DEFECTIVE SURFACES AND GRADUALLY PENETRATE INTO THE CRYSTALS. OXIDES FORM WITHIN THE CRYSTALS AND INTERFERE WITH DISLOCATION SLIPPAGE CAUSING MICROCRACKS. FATIGUE CAUSES THE APPEARANCE OF VACANCIES WHICH COALESCE FORMING PORES; O PENETRATING THE PORES OXIDIZES THEIR SURFACES LEADING TO FORMATION OF MICROCRACKS.

UNCLASSIFIED

1/2 017 ^A UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--STRUCTURAL CHANGES DURING FRETTING CORROSION -U-

AUTHOR--ALYABYEV, A.YA., SHEVELYA, V.V., ROZHKOV, M.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHM. MEKH. MATER. 1970, 5(6), 650-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL CRACKING, CRYSTAL DISLOCATION, FRETTING CORROSION,
MATERIAL FATIGUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0663

STEP NO--UR/0369/70/005/006/0650/0655

CIRC ACCESSION NO--AP0105640

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0131390

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH AN EXTERNAL BEAM OF THERMAL NEUTRONS, THE GAMMA RAY SPECTRA OF EVEN ODD NUCLEI OF BARIUM (PRIME135 BA, PRIME137 BA, PRIME139 BA) AND CERIUM (PRIME139 CE, PRIME141 CE, PRIME143 CE) WERE MEASURED WITH THE HELP OF A SINGLE CRYSTAL GE(LI) SPECTROMETER. THE SPECTRA OBTAINED TOGETHER WITH THE GAMMA RAY SPECTRA OF ODD NEODYMIUM NUCLEI MADE IT POSSIBLE TO DISCOVER CERTAIN REGULARITIES IN THE DE-EXCITATION OF EVEN ODD NUCLEI WITH NEUTRON NUMBERS N EQUALS 79, 81, 83, AND 85, TESTIFYING TO DIRECT THERMAL NEUTRON CAPTURE BY EVEN ODD NUCLEI IN THE NEIGHBORHOOD OF THE MAGIC NUMBER N EQUALS 82. FACILITY: AKADEMIYA NAUK SSSR, MOSCOW. INSTITUT ATOMNOI ENERGII.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--04DECTO
TITLE--THE DE-EXCITATION OF EVEN ODD NUCLEI NEAR THE MAGIC NUBMER N EQUALS
82 AFTER THERMAL NEUTRON CAPTURE -U-
AUTHOR-(04)-GROSHEV, L.V., DVORETSKIY, V.N., DEMIDOV, A.M., ALVASH, M.S.

COUNTRY OF INFO--USSR

SOURCE--LA-TR-69-29, FROM REPORT IAE-1780. 13P. DEP. CFSTI

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, MATERIALS

TOPIC TAGS--ISOTOPE, BARIUM, CERIUM, NEODYMIUM, NEUTRON CAPTURE,
SPECTROSCOPIC ANALYSIS, GAMMA IRRADIATION, THERMAL NEUTRON, LITHIUM,
GERMANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0796

STEP NO--UR/0000/70/000/000/0013/0013

CIRC ACCESSION NO--AT0131390

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. X IRRADN. AND ABSORPTION SPECTRAL DATA ON KCL-TL CRYSTALS, CONTG. 0.1 MOLE PERCENT TL, WERE OBTAINED AT LIQ. N TEMP. THE KINETICS OF COLOR CENTER ACCUMULATION (F, V SUBK, TL AND TL PRIME POSITIVE POSITIVE CENTERS) AT 77DEGREES K AND THE ESTN. OF THE HOLE ENERGY DISTRIBUTION IN THE V SUBK AND TL PRIME POSITIVE POSITIVE CENTERS ARE DISCUSSED. THE ENERGY LIMIT, E SUBM EQUALS 0.054 EV (600DEGREES K), AT WHICH HOLES CAN BE AUTOLOCALIZED CAN BE INTERPRETED AS THE DEPTH OF A POTENTIAL WELL CORRESPONDING TO AN ANIONIC POINT IN A REGULAR HOLE LATTICE.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ROLE OF COULOMB INTERACTION IN THE RADIATIVE CREATION OF COLOR
CENTERS IN THALLIUM ACTIVATED POTASSIUM CHLORIDE -U-
AUTHOR-(03)-ALUKER, E., AKSENOV, O.E., ROMANENKO, N.L.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, FIZ. TEH. ZINAT. SER 1970, (1)
78-83
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--OPTIC PROPERTY, POTASSIUM CHLORIDE, X RAY IRRADIATION,
ABSORPTION SPECTRUM, THALLIUM, REACTION KINETICS, HOLE MOBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0608

STEP NO--UK/0371/70/000/001/0078/0083

CIRC ACCESSION NO--AP0105591

UNCLASSIFIED

RND / 18-160/5-1972-13
 June 1972

Almouzni, M. I., A. T. Alievsky, and
 N. A. Reshkov. Heating of plasma during
 compression by a collisionless shock wave.
 ZhEF, v. 62, no. 6, 1972, 211-218.

The energy spectra of plasma ions heated by a collisionless shock wave are obtained by passive toroidal diagnostics. When an aperiodic shock front with resistive dissipation is formed in the plasma, ion heating appears as a small group of ions (about 10%) with a mean energy of the order of the electron temperature; the remaining ions are cold. Experimental results agree with a theoretical model, in which the origin of this group of particles is explained by the linear Landau damping of ion-acoustic vibrations in resonance ions located in the "tail" of the distribution function, induced in the shock front.

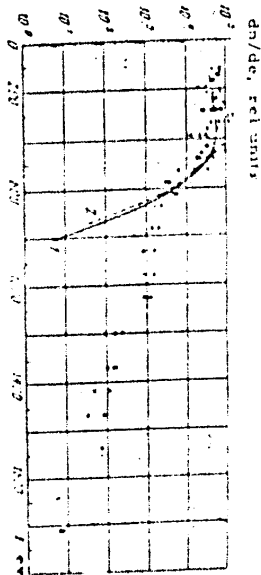


Fig. 1. Typical ion energy spectrum for low Mach numbers ($M < 1$). Parameters: $N = 1.8$, $n = 2$, $n = 1.4 \times 10^{18} \text{ cm}^{-3}$, $H_0 = 520 \text{ oc}$. 1. Calculated approximation for constant ion velocity, $T_i = 6 \text{ eV}$, $E_{\text{H max}} = 4.08 \text{ eV}$. 2. Calculated approximation for increasing ion velocity, $T_i = 7.5 \text{ eV}$, $E_{\text{H max}} = 480 \text{ eV}$.

ALT-YNTSEV, A.T.

USSR

KOVAL'SKIY, V. V., et al, Doklady Akademii Nauk SSSR, Vol 194, No 6, 1970, pp 1429-1432

ter incubation for 2 hours. In another series of experiments, the recipient (strain 101) grown on Czapek's medium without Se failed to reduce selenite when subsequently incubated with it. The donor (strain 8), on the other hand, produced selenoreductase under the same conditions. The transformants also exhibited selenoreductase activity, but to a lesser degree than the donor.

USSR

UDC: 576.8.095.332

KOVAL'SKIY, V. V., LETUNOVA, S. V., and ALTYNBAYEVA, R. D., Biogeochemical Laboratory, Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, Academy of Sciences USSR, Moscow

"Genetic Transformation of Resistance to Selenium and Formation of Selenoreductase by *Bacillus megatherium*"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 6, 1970, pp 1429-1432

Abstract: A study was made of two *B. megatherium* strains: strain 8, isolated from soil with a high selenium content (Tuva ASSR) and adapted to excess Se under natural conditions; and strain 101, isolated from soil with a low Se content (Moscow Oblast) and adapted to this concentration. It was found that strain 8 grown on Czapek's medium without Se reduces selenite upon subsequent inoculation with selenite. Selenoreductase is invariably found in strain 8, regardless of the presence of Se in the nutrient medium. Strain 101 produces selenoreductase only when grown on a medium with Se. In an attempt to transform the low resistance to Se and selenoreductase activity in strain 101, RNA isolated from strain 8 (donor) was added to a medium with strain 101 (recipient). Cultures of transformants resistant to high concentrations of Se were obtained in the medium at $1/2$

USSR

ALTYBASOROV, M.K.

"The Stability of Permanent Rotation of a Body with Cavities Filled with a Liquid of Variable Mass Considering the Reactive Moment of Resistance of the Medium"

Mathematika i Mekhanika. Tezisy Dokl 4-y Kazakhstan. Mezhvuz. Nauch. Konf. Po Mat. i Mekh. Ch. 2 [Mathematics and Mechanics, Theses of Reports of 4th Kazakhstan Inter-University Scientific Conference on Mathematics and Mechanics. Part II -- Collection of Works], Alma-Ata, 1971, pp 18-19. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1A175).

Translation: The system of equations of motion allows the partial solution

$$\omega_1 = \omega_2 = \gamma = \gamma_1 = 0, \gamma_2 = 1$$

$$\omega_2 = \omega_1 e^{int} \left[\omega_0 + \int \left(an - \frac{dv}{dt} \right) e^{int} dt \right], n = \frac{k}{c_1}$$

which corresponds to uneven permanent rotation of a mechanical system around its vertical axis. Sufficient conditions of stability of this rotation are found by construction of the Lyapunov function.

1/1

Biochemistry

USSR

UDC 577.1:615.7/9

ALTUNYAN, N. M.

"Amino Acid Content of a New Blood Substitute from Placenta - Aminoplacentine"

Aminokislottnyy sostav novogo krovozamenitelya iz platsenty - aminoplatsentina (cf. English above), Redkollegiya "Biol. zh. Armenii" AN ArmSSR, (Editorial Board of the Biological Journal of Armenia), Yereven, 1972, 6 pp, manuscript deposited in VINITI No 4473-72 Dep, 23 Jun 72, (from RZh-Biologicheskaya Khimiya, No 23, Dec 72, Abstract No 23 F2567 Dep)

Translation: Using an amino acid autoanalyzer, the author found that aminoplacentine (a protein hydrolysate from placenta) contains all the irreplaceable amino acids and that it exceeds hydrolysine in biological value (58 and 47 units, respectively).

USSR

ALTUNYAN, S. A., et al., Fizika i tekhnika poluprovodnikov, Vol 4, No 11, 1970, pp 2214-2215

75-85 at.% Te. From investigation of the vitreous materials containing 20 at.% Si, 80 at.% Te, and 25 at.% Si, 75% Te, an exothermic effect reflecting an ordered structure in the glass was found.

USSR

UDC: 621.382.2

ALTUNYAN, S. A., MINAYEV, V. S., MINAZHDINOV, M. S., and SKACHKOV,
~~B. K.~~

"Vitreous Formations in Si-Te Systems and Diode Switching Structures with 'Memory' on the Basis of Semiconductor Glass in the System"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol. 4, No. 11, 1970, pp 2214-2215

Abstract: This article describes the synthesis of several compounds with various contents of silicon and tellurium and the study of the effect of the history of the glass on vitreous formations and its switching characteristics. The purpose of this work was to explain the vitreous formation region in the Si-Te system and the effect of its glass content on switching characteristics. To identify the state of the vitreous formation, the methods of differential thermal analysis and x-ray phase analysis were used. The experiments showed that the vitreous formation region, when tempered in liquid nitrogen, lies within 15-25 atomic % Si and

USSR

UDC: 621.396.6.002

SHABROV, V. G., MALYAR, V. V., ALTUNIN, V. I.

"State and Prospects of Repair Production in the Sector"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 1, p 92 (from PZh-Radiotekhnika, No 8, Aug 72, Abstract No 8V357)

Translation: The paper briefly characterizes the state of repair production in the sector. The advantages of a centralized system of repair service to enterprises are considered. Resumé.

1/1

- 65 -

USSR

UDC 632.95

ASEYEVA, I. V., GORCHARUK, L. G., ALTUKHOV, M. D., and SAMOKHVALOV, A. N.

"Herbicidal Activity of the Butyl Ether of 2,4-D on the Chemical Properties of Plants"

Nauch. dokl. Vysch. shkoly. Biol. n. (Scientific Institute for Higher Education in the Biological Sciences), No 2, 1973, pp 87-90 (from Referativnyy Zhurnal -- Khimiya, No 13(II), 1973, Abstract No 13N526)

Translation: The concentration of total nitrogen and free amino acids in twisted reed grasses increased after treatment with the butyl ester of 2,4-D. The amount of different amino acids changed but the sum of the total amino acids in the protein remained constant. Under the influence of the butyl ester of 2,4-D the concentration of chlorophyll in the reed grasses increased but the concentration of mono- and disaccharides decreased. The concentration of cells in the plants did not change.

1/1

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0128880
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TITLE COMPS. ARE PREPD. BY
TREATING O METAL DERIVS. OF 5, HYDROXYINDGLES OR N, METAL DERIVS. OF
SUBSTITUTED INDOLES OR TETRAHYDROCARBAZOLES WITH A HALOALKYLDIALKYL
AMINE AT 120-50DEGREES. FACILITY: ORDZHONIKIDZE, S., ALL UNION
SCIENTIFIC RESEARCH CHEMICAL PHARMACEUTICAL INSTITUTE.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DIALKYLAMINEALKYL DERIVATIVES OF INDOLE OR TETRAHYDROCARBAZOLE -U-
AUTHOR--(03)-SHVEDOV, V.I., GRINEV, A.N., ALTUKHOVA, L.B.
COUNTRY OF INFO--USSR *A*
SOURCE--USSR 265,885
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--17MAR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AMINE DERIVATIVE, INDOLE, ORGANIC AZOLE COMPOUND, HYDROXYL
RADICAL, CHEMICAL PATENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1481 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0128880
UNCLASSIFIED

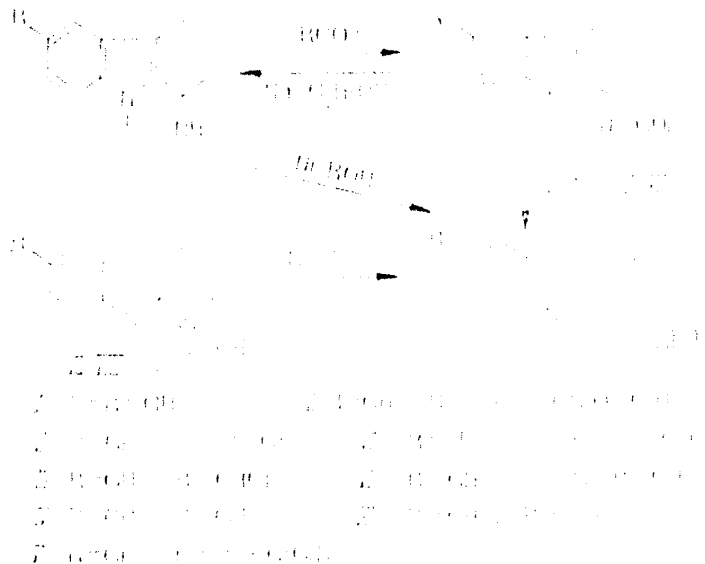
2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0128048
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVS. OF 2 AMINOPYRROLE (I) WERE
CONDENSED WITH 1,3,DICARBONYL,ERIVS. IN REFLUXING C SUB5 H SUB5 N OR
ACOH OR HEATED WITHOUT SOLVENT AT 150-60DEGREES TO YIELD THE FOLLOWING
II (R, R PRIME1, R PRIME2, R PRIME3, M.P., AND PERCENT YIELD GIVEN):
SHOWN ON MICROFICHE. FACILITY: VES. NAUCH.-ISSLED. KHIM.-FARM.
INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF PYRROLO,1,2,ALPHA,PYRIMIDINE DERIVATIVES -U-
AUTHOR--(04)-SHVEDOV, V.I., KHARIZOMENOVA, I.A., ALTUKHOVA, L.B., GRINEV,
A.N.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SUEVIN. 1970, (3), 428
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PYRROLES, ORGANIC NITROGEN COMPOUND, PYRIMIDINE, AMINE
DERIVATIVE, MOLECULAR STRUCTURE, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0479 STEP NO--UR/0409/70/000/003/0428/0428
CIRC ACCESSION NO--AP0128048
UNCLASSIFIED

USSR

SHVEDOV, V. I., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 4,
No 7, 1970, pp 5-7



USSR

UDC 547.861.3'752

SHVEDOV, V. I., ALTUKHOVA, L. B., and GRINEV, A. N., All-Union Scientific Research Chemico-Pharmaceutical Institute named Sergei Ordzhonikidze, Moscow, Ministry of Health USSR

"N-Acyl and N-Alkyl Derivatives of 1,10-Trimethylenepiperazino(1,2-a)indole"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 7, 1974, pp 5-7

Abstract: Methods were developed for synthesizing the N-alkyl and N-acyl derivatives of piperazino(1,2-a)indole, which exhibits antihistaminic and hypotensive action. The N-acyl derivatives (I-IV) were obtained by acylation of 8-methyl-1,10-trimethylenepiperazino(1,2-a)indole with acetic anhydride or acid chlorides. Alkylation of derivatives of piperazino(1,2-a)indole by ordinary alkylating agents occurs with complications and leads to formation of resinous products. N-alkyl derivatives can be obtained by indirect methods. Hydrogenation of iodomethylates (VII and VIII) over skeletal nickel catalyst leads to the corresponding N-methyl derivatives (IX and X), while reduction of N-acetyl-8-methyl-1,10-trimethylenepiperazino(1,2-a)indole(I) with lithium aluminum hydride yields the N-ethyl derivatives (XI).

1/2

USSR

SHVEDOV, V. I., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 10, Oct 72, pp 14-17

and analogously from 2,3-dihydro-4-keto-8-methylthiopyrano [3,2-b] indole obtained 2,3-dihydro-10-methylpyrazino 1,2-a thiopyrano [3,2-b] indole, isolated as the hydrochloride. The reduction of XII, XIII, XV with sodium in boiling ethanol gives derivatives of piperazino [1,2-a] indole. It was also found that piperazino [1,2-a] indoles can be obtained by the reduction cyclization of N-acetamide derivatives of 1-keto-1,2,3,4-tetrahydrocarbazole with sodium in boiling ethanol.

Pharmacological investigations showed that derivatives of 1,10-trimethylene-piperazino [1,2-a] indole possess properties characteristic of substances with antidepressive activity (imizin etc.) and compounds with a neuroleptic effect (aminazin etc.). An affinity with antidepressants of the imipramine type is most characteristic of the studied derivatives. The corresponding derivatives of pyrazino [1,2-a] indole have a lower activity than those of piperazino [1,2-a] indole. The studied compounds are of comparatively low toxicity.

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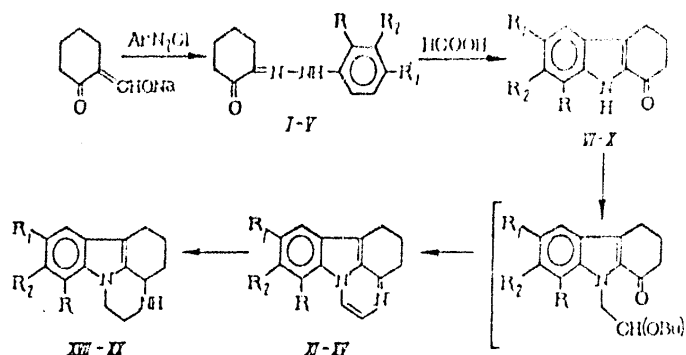
UDC 615.31:[547.861.3+547.751].01].1

SHVEDOV, V. I., ALTUKHOVA, L. B., ANDREYEVA, N. I., MASHKOVSKIY, M. D., and GRINEV, A. N., All-Union Scientific Research Pharmacochemical Institute imeni S. Ordzhonikidze, Moscow

"Pyrazino- and Piperazino[1,2-a]indole Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 10, Oct 72, pp 14-17

Abstract: The authors synthesized some new derivatives of pyrazino[1,2-a]indole according to the scheme:

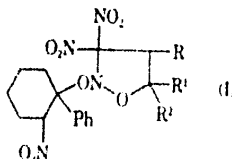


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CHEMICAL ABST.ALTUKHOV K.V.
4/70 Ref. Code:
UR0366

90354g Directed synthesis of 2-(2-nitroalkoxy)-3,3-dinitro-isoxazolidine derivatives. Buevich, V. A.; Altukhov, K. V.; Perekalin, V. V. (Leningrad. Gos. Pedagog. Inst. im. Gertsena, Leningrad, USSR). *Zh. Org. Khim.* 1970, 6(1), 187-8 (Russ). A mixt. of 1:1:1 1-phenylcyclohex-1-ene, $C(NO_2)_4$, and $RCH=CR^1R^2$ was kept at room temp., evapd., and chromatographed to give trisubstituted 3,3-dinitro-2-(2-nitro-1-phenylcyclohex-1-yloxy)isoxazolidines (I) (R, R^1 , and R^2 given): H, Bu, H; H, H,



amyl, H; H, Me_3CCH_2 , Me; H, CH_2Br , H; H, CH_2OH , H. In the same way, 3,3-dinitro-2-(2-nitro-1-phenylcyclohex-1-yloxy) perhydrobenzoxazole was prepd. The alk. hydrolysis of I ($R = R^2 = H$, $R^1 = Bu$) gave 3-nitro-2-phenylcyclohexene.

CPJR

REEL/FRAME
19800560

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
 CIRC ACCESSION NC--AP0125604
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COURSE OF THE TITLE REACTION
 DEPENDS ON THE SUBSTITUTION OF THE ALKENE DOUBLE BONDS. RCH:CPH SUB2
 (I) (R EQUALS PH) REACTED WITH C(NO SUB2) SUB4 TO GIVE PHC(NO SUB2):CPH
 SUB2. I (R EQUALS H) GAVE HC(NO SUB2):CPH SUB2 AND H SUB2 C(NO
 SUB2)C(OH)PH SUB2. RCME:CHPH (R EQUALS H OR ME) GAVE RCME(NO SUB2)HZ
 AND HCN:C(NO SUB2) SUB2 YIELDS N SUB2 O SUB3. PHCH:CMEPH (R IS ME OR
 PH) GAVE PHCH(NO SUB2)CPH:CH SUB2. RCH:CR PRIME1 R PRIME2 GAVE 2,(CR
 PRIME1 R PRIME2 CH(NO SUB2)R), 4R,5,R PRIME1, R PRIME2
 DISUBSTITUTE,3,3,DINITROISOXAZOIDINES (R, R PRIME1, R PRIME2 GIVEN): H,
 ME, PH; ISO-PR, ME, ME; ME, H, ET. FACILITY: LENINGRAD.
 PADAGCG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STERIC FACTORS IN THE REACTION OF TETRANITROMETHANE WITH ALKENES
-U-
AUTHOR--(03)-BUYEVICH, V.A., ALTUKHOV, K.V., PEREKALIN, V.V.
COUNTRY OF INFO--USSR
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CIRC ACCESSION NO--AP0125604
UNCLASSIFIED

USSR

ALTUKHOV, A. M.; et al

"Study of Cosmic Ray Flows in Interplanetary Space. II."

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya; November, 1970;
pp 2351-9

ABSTRACT: Equations are derived for finding the flow of cosmic rays in the vicinity of anisotropic diffusion, for a small depth of modulation. A solution to the equations is found in which the velocity of the solar wind does not depend on the distance to the sun but the diffusion coefficient is an exponential function of the distance. The solution is applied to the model of a solar wind in the form of a conical flow of matter with a high velocity against a slow background. The field of currents and the behavior of the flow in an earth orbit as a function of time are determined. Currents caused by shock waves are considered in an envelope approximation. It is shown that after western chromospheric flares the flow is directed toward the sun; and in other cases, away from the sun.

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UDC 911.3:616.981.452(574.11)

SHEVCHENKO, V. L., ~~ALTUKHOV, A. A.~~, IVANOV, S. I., YERZHANOV, S. T.,
GRAZHDANOV, A. K., KAYMASHNIKOV, V. I., and MEDZYKOVSKIY, G. A.

"Isolation of a Culture of Plague Bacteria in the Spring of 1968 on the North-east Border of the Volga-Ural Sands"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works), Saratov, No 4(14), 1970, pp 135-138 (from RZh-Meditsinskaya Geografiya, No 3, Mar 71, Abstract No 3.36.115)

Translation: The conditions of isolation and results of a study of two strains of plague bacteria in the natural landmark area of Annar, the Furmanovskiy rayon of Uralskiy Oblast are described. Both strains were isolated in a region in which no epizootic diseases have been recorded for more than 20 years and in which great gerbils are almost completely nonexistent. The reduced virulence, as well as some cultural and biochemical characteristics of the cultures studied, clearly differentiate them from the earlier isolated strains on the Volga-Ural Sands both in peak epizootic periods as well as in the inter-epizootic years.

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USSR

UDC 911.3:616.981.452(47)

SHEVCHENKO, V. L., IVANOV, S. I., ALTUKHOV, A. A., and BEREZHNNOV, A. Z.

"Method and Tactics of Epizootiologic Survey for Plague in the Volga-Ural Sands"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of Works), Saratov, No 4(14), 1970, pp 129-134 (from RZh-Meditsinskaya Geografiya, No 3, Mar 71, Abstract No 3.36.116)

Translation: Epizootics of plague in the Volga-Ural interfluvial area are most frequent and constant over a wide area extending from the southwestern boundary of the sands through the central part to the north-eastern edge. The significance of the little suslik in the transfer of the pathogen during the summer months is reconfirmed. A schema of fundamental methods for the examination of plague foci during the period of the interepizootic lull and during active periods is presented. Evaluation of the methods used for laboratory research is presented.

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UDC: 621.372.853.09

AL'TSHULER, Yu. G., Izvestiya VUZ -- Fizika, No 9, 1973, pp 7-13
such devices as attenuators and phase shifters.

USSR

UDC: 621.372.853.09

AL'TSHULER, Yu. G., YERSHOV, V. V., and KATS, L. I.

"Electromagnetic Wave Propagation in Channelized Systems Partially Filled With a Solid-State Magnetoactive Plasma"

Tomsk, Izvestiya VUZ -- Fizika, No 9, 1973, pp 7-13

Abstract: This paper solves the problem of computing the dispersion of partially filled waveguides for the following configurations of channelized systems: a cylindrical waveguide with a concentrically placed solid-state plasma rod in a longitudinal magnetic field, and a waveguide of rectangular cross section with a solid-state plasma plate, extending longitudinally, in a transverse magnetic field. The relationships obtained in the theoretical portion of the paper were experimentally tested by a measuring device based on a balanced bridge circuit for determining the complex transfer factor of a measured four-terminal network, the plasma-filled waveguide. The dispersion characteristics are plotted, and a curve is obtained for the experimental propagation constants as functions of the frequency for a rectangular waveguide. It is concluded that these configurations are practical for at least 1/2

USSR

UDC: 621.396.69:621.372.412(088.8)

AL'TSHULLER, G. B., LASSOVIK, S. I.

"A Thermostat for Quartz Resonators"

USSR Author's Certificate No 259178, filed 15 Mar 68, published 4 Jun 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V408 P)

Translation: This Author's Certificate introduces a thermostat for quartz resonators made in the form of an evacuated vessel equipped with a heating element. As a distinguishing feature of the patent, extraneous effects on the resonator are reduced by making the heating element in the form of an electroconductive coating applied directly to the inside surface of the vessel.

USSR

UDC: 621.373.421.13

AL'TSHULLER, G. B., MIRZIN, V. I., PARFENOV, V. G.

"Effect Which the Transconductance Phase of a Transistor Has on the Frequency Stability of a Quartz Crystal Oscillator"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Technical Electrical Communications--collection of works), Moscow, "Svyaz'", 1970, pp 113-121 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No No 1D342)

Translation: The authors consider frequency relationships in a quartz crystal controlled oscillator with regard to complex conductivities and the transconductance phase of the transistor. An expression is presented for determining the mismatch of the oscillator relative to the series resonance frequency. A formula is derived for calculating the component of frequency instability due to the effect of a change in the transconductance phase of the transistor. In addition, a study is made of the dependence of the given frequency instability component on the value of the given mismatch. Three illustrations, bibliography of six titles. Resumé.

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USSR

AL'TSHULER, Yu. G., SOSUNOV, V. A., YAZIKOV, V. N., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1, 1970, pp 73-74.

and monitoring the parameters of liquid dielectrics in the continuous mode. Measurements showed that the method has high sensitivity in measuring the moisture content of petroleum on superhigh frequencies. Two illustrations. E. L.

USSR

UDC; 621.317.341:621.317.335

AL'TSHULER, Yu. G. SOGUNOV, V. A., YAZIKOV, V. N.

"An Automatic Instrument for Measuring the Complex Coefficients of Transmission of Two-Terminal - Pair Networks, and its Use for Studying the Parameters of Materials"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 73-74 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A387)

Translation: The authors describe the circuit of an instrument for automatic measurement of complex transfer constants. The device utilizes a combination of two-phase microwave discriminators, one based on a double waveguide connector (tee) (cophase-antiphase bridge), and the other based on a 3-dB loop coupler (quadrature bridge). The working characteristics of these discriminators are shifted in phase by 90° ; therefore using them in the circuit of the instrument for automatic measurement of complex transfer constants makes possible panoramic display of the measured quantities. The instrument was developed in response to the need for measuring

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